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| 10/776,534 | 02/12/2004 | Kenya Takamidoh | 0879-0429P | 4118 |
| 2292 7590 03/07/2008 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747 | | | EXAMINER PATEL, JAYESH A | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

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|------------------------------|-------------------------------|----------------------------------|--|
| Office Action Summary | Application No. 10/776,534 | Applicant(s) TAKAMIDOH, KENYA | |
| | Examiner Jayesh A. Patel | Art Unit 2624 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendments made to the claims dated 12/26/2007 has been entered.
2. The arguments to claim 1-3 are moot in view of the amendments.
3. The arguments to claims 4-6 are moot in view of the amendments.
4. The arguments regarding claim 7-9 on Page 16 that Blank (5577179) does not disclose "a boundary part representing a contour of the person with low certainty", the examiner disagree. Blank (5577179) disclose at **(Col 16 Lines 48-50 where the computer selects three pixels just outside the edge of the object (boundary part with low certainty) and uses them as edge pixels in the correction process)**. The boundary part with low certainty is merely a boundary part of the background that is close to the contour of the person and is not the actual boundary of the person. Thus in Blank (5577179) it is the three pixel width region which is outside the edge of the object and is low in certainty as the real contour.
5. The applicant argues on bottom of page 16 that blending is not a correction and Blank (5577179) does not disclose the "correction processing to the boundary part for concealing the boundary part", the examiner disagrees. First of all blending is a form of correction in the image processing art and Blank bending (correcting) the pixels of the background and the foreground (object) corrects the boundary parts of the background and the foreground to conceal the boundary part with low certainty **(pixels part of the background not belonging to the foreground)**. This is explained in **(Col 16 Lines 50-53)** where the "background

layer directly below the object layer is a low certainty as a true contour of a person.

6. The arguments with respect to claim 13 about "a level of certainty" on page 21 are moot in view of the amended claim 1.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 10-15, 21, 27, 4-6, 16-20, 23 and 28 are rejected under 35 U.S.C. 112.

The term "a level of certainty" in claims 1, 4 is a relative term which renders the claim indefinite. The term "a level of certainty" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The disclosure at page 2 and in Fig 3 does not provide a level of certainty.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 10, 14, 16-19, 21, 23, 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blank (US. 5345313) hereafter blank in view of Enomoto (US 7324246) hereafter Enomoto.

7. Regarding claim 1, Blank discloses a portrait image processing method in **(Fig 6)** comprising the steps of: extracting a portrait image from an original image including a person and a background **(Col 2 Lines 60-68 and Col 9 Lines 3-8)**; compositing the extracted portrait image and a background image prepared in advance to create a composite image at **(Col 3 Lines 56-67)**; detecting a boundary of the person and the background from the original image at **(Col 2 Lines 60-67, Col 9 Lines 3-14 and Col 8 Lines 44-49)**; and applying correction processing to a boundary part which is judged not to be a true contour of the person, for concealing the boundary part **(contiguous to the edge)** in the created composite image at **(Col 4 Lines 17-27, Col 9 Lines 36-45 and Figs 5d-5e)**. Blank discloses detecting the contour of a person as seen in Figs **(5A-5E)** and **(7A-7d)**. Blank is silent and however does not disclose determining a level of certainty as to whether or not the detected boundary is a true contour of the person for each part of the detected boundary.

Enomoto discloses determining a level of certainty as to whether or not the detected boundary is a true contour of the person for each part of the boundary at **(Col 12 Lines 55 through Col 13 lines 1-26 where the degree of certainty of the contour of the face is weighted from the background in-**

order to extract the face region). Enomoto further discloses that if the weight score is larger than the threshold value than the region os the face of the person or the contour of the person at **(Col 13 Lines 1-2).** Enomoto discloses that the method and apparatus of face trimming take short time for execution at **(Col 21 lines 29-41).** Blank and Enomoto are from the same field of endeavor and are analogous art therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the teachings of Enomoto in the method and apparatus of Blank for the above reasons.

8. Regarding Claim 2, Blank and Enomoto discloses the portrait image processing method according to claim 1. Blank further disclose wherein said correction processing is image processing for overwriting **(making transparent background)** another image on the boundary part which is judged not to be the true contour of the person at **(Fig 5d-5e,Col 3 Lines 35-42 and Col 8 Lines 44-68).** The process of further blending at **(Col 4 Lines 21-27)** the object in to the preselected image, the processor averages the hue of edge of the object and the hue of the portion of the pre selected background that is **(contiguous to the edge).** The averaging of the pixels will be overwriting the boundary part, which is judged not to be a true contour of the person.

9. Regarding Claim 3, Blank and Enomoto discloses the portrait image processing method according to claim 1. Blank further disclose wherein said

correction processing is image processing for shifting the portrait image such that the boundary part, which is judged not to be the true contour of the person, is outside a frame of the composite image at **(Fig 7a-7d and Col 12 Lines 53-68 through Col 13 Lines 1-34)**. Blank also discloses in Fig 7c the portion 66, which is judged not to be the true edge **(background portion near the edge)** is shifted **(changed by blending or removing)** in Fig 7d. Blank also discloses the fact at **(Col 4 Lines 8-33)**.

10. Claim 4 is a corresponding apparatus claim of a method of Claim 1. See the explanation of Claim 1. Blank further discloses the apparatus in **(Figs 1, 2 and 3)**.

11. Claim 5 is a corresponding apparatus claim of a method of Claim 2. See the explanation of Claim 2. Blank further discloses the apparatus in **(Figs 1,2 and 3)**.

12. Claim 6 is a corresponding apparatus claim of a method of Claim 3. See the explanation of Claim 3. Blank further discloses the apparatus in **(Figs 1,2 and 3)**.

13. Regarding Claim 10, Blank discloses the portrait image processing method according to claim 1, wherein said background is arbitrary in **(Col 6 Lines 18-20)**.

14. Regarding Claim 14, Blank and Enomoto disclose the portrait image processing method according to claim 1. Enomoto further disclose the degree of certainty of the person using the weight score of the person and the background which is determining whether a boundary part of the detected boundary is a boundary part with high certainty as a contour of the person, and/or whether or a boundary part of the detected boundary is a boundary part with low certainty as a contour of the person as **(Col 12 Lines 55 through Col 13 lines 1-26)**.

15. Regarding claim 16, Blank discloses the portrait image processing apparatus according to claim 4, wherein said background is arbitrary **(Col 6 Lines 18-20)**.

16. Regarding Claim 17, Blank and Enomoto discloses the portrait image processing apparatus according to claim 4. Enomoto further disclose wherein said portrait image extracting device extracts facial parts from the original image, the facial parts including at least one of eyes, nose and mouth **(Col 11 Lines 12-13 and as seen in Figs 3A and 3B)**.

17. Regarding Claim 18, Blank and Enomoto discloses the portrait image processing apparatus according to claim 4. Enomoto further disclose wherein said boundary detecting device uses an average positional relationship between a position of a facial part and a boundary of a person and a background, to detect the boundary as disclosed at **(Col 12 Lines 55 through Col 13 lines 1-**

26). The weight ratio gives the positional relationship between the background and the face (contour) of the person.

18. Regarding Claim 19, Blank and Enomoto discloses the portrait image processing apparatus according to claim 4. Enomoto further disclose wherein said judging device determines whether a boundary part of the detected boundary is a boundary part with high certainty as a contour of the person, and/or whether or a boundary part of the detected boundary is a boundary part with low certainty as a contour of the person **(Col 12 Lines 55 through Col 13 lines 1-26).**

19. Regarding Claim 21, Blank and Enomoto discloses the portrait image processing method according to claim 1. Enomoto further disclose wherein said extracting step is performed for extracting facial parts at **(Col 11 Lines 12-13 and as seen in figs 3a-3b).**

20. Regarding Claim 23, Blank and Enomoto discloses the portrait image processing apparatus according to claim 4. Enomoto further disclose wherein said portrait image extracting device extracts facial parts at **(Col 11 Lines 12-13 and as seen in figs 3a-3b).**

21. Regarding Claim 27, Blank and Enomoto disclose the portrait image processing method according to claim 1. Blank further disclose wherein said step of applying correction processing is performed only for a boundary part representing a contour of the person with low certainty by **(making transparent background)** another image on the boundary part which is judged not to be the true contour of the person at **(Fig 5d-5e, Col 3 Lines 35-42 and Col 8 Lines 44-68)**. The process of further blending at **(Col 4 Lines 21-27)** the object in to the preselected image, the processor averages the hue of edge of the object and the hue of the portion of the pre selected background that is **(contiguous to the edge)**. The averaging of the pixels will be overwriting the boundary part, which is judged not to be a true contour of the person.

22. Regarding Claim 28, Blank and Enomoto disclose the portrait image processing apparatus according to claim 4. Blank further disclose wherein said image correcting device performs correction processing only for a boundary part representing a contour of the person with low certainty by **(making transparent background)** another image on the boundary part which is judged not to be the true contour of the person at **(Fig 5d-5e, Col 3 Lines 35-42 and Col 8 Lines 44-68)**. The process of further blending at **(Col 4 Lines 21-27)** the object in to the preselected image, the processor averages the hue of edge of the object and the hue of the portion of the pre selected background that is **(contiguous to the**

edge). The averaging of the pixels will be overwriting the boundary part, which is judged not to be a true contour of the person.

Claims 7- 9, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blank (US. 5577179) hereafter 5577179 in view of Enomoto

23. Regarding Claim 7, 5577179 discloses a portrait image processing method, said method comprising: extracting a portrait image from an original image including a person and a background (**Col 3 Lines 54-67**); compositing the extracted portrait image with a background image prepared in advance (**Col 4 Lines 59-64**) to create a composite image; detecting a boundary of the person in the original image (**Col 3 Lines 63-67**); identifying, in the detected boundary, a boundary part representing a contour of the person with low certainty (**Col 16 Lines 48-50 where the computer selects three pixels just outside the edge of the object and uses them as edge pixels is the boundary part with low certainty**); and applying correction processing (**blend operation**) for concealing the boundary part in the created composite image at (**Col 16 Lines 50-53, Col 17 Lines 4 and 23**). According to Blank in (**Col 16 Lines 50-53**) where the "background layer directly below the object layer" is a low certainty boundary part as a true contour of a person (object layer). Enomoto also discloses the degree of certainty of the background and the face (contour of a person) using the weight scores at (**Col 12 Lines 55 through Col 13 lines 1-26**). Enomoto

discloses that the method and apparatus of face trimming take short time for execution at **(Col 21 lines 29-41)**. 5577179 and Enomoto are from the same field of endeavor and are analogous art therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the teachings of Enomoto in the method and apparatus of 5577179 for the above reasons.

24. Regarding Claim 8, 5577179 and Enomoto discloses the portrait image processing method according to claim 7. 5577179 further disclose wherein said correction processing is image processing for overwriting the boundary part with another image at **(Col 16 Lines 58-63)**. The computer sets the transparency or opacity **(overwriting with another image)** of each of the three object pixels according to the blend factor.

25. Regarding Claim 9, 5577179 and Enomoto discloses the portrait image processing method according to claim 7. 5577179 further disclose wherein said correction processing is image processing for shifting the portrait image such that the boundary part is outside a frame of the composite image at **(Col 16 Lines 58-63)**. The computer sets the transparency or opacity **(overwriting with another image)** of each of the three object pixels according to the blend factor.

26. Regarding Claim 25, 5577179 and Enomoto disclose the portrait image processing method according to claim 7. 5577179 further disclose wherein said extracting step is performed for extracting facial parts (**Col 14 Lines 60-63 and Col 15 Lines 39-43**). Enomoto also discloses the extraction of face at (**Col 11 Lines 12-13**).

27. Claim 26 is a corresponding method Claim as in claim 7. See the explanation of Claim 7 and Enomoto further discloses a boundary part where the length between coordinate points on the boundary is partially larger than a decided value due to unevenness of the boundary at (**Col 12 Lines 55 through Col 13 lines 1-26**) where the weight score is adjusted according to the set according to the degree of unevenness of the boundary.

Claim 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blank in view of Enomoto and in further view of 5577179.

28. Regarding Claim 11, Blank and Enomoto discloses the portrait image processing method according to claim 1. Enomoto discloses the level of certainty of facial parts at (**Col 12 Lines 55 through Col 13 lines 1-26**). Blank discloses the extraction of an object which is a human being, however is silent and does not disclose wherein said extracting step extracts facial parts from the original image, the facial parts including at least one of eyes, nose and mouth. 5577179 at (**Col 14 lines 60-63**) disclose where the file header contains the information

regarding the location of the eyes, which is used for extraction. 5577179 further discloses that such a digital image editing system can automatically size, position, layer the digital image of a replacement object or multiple objects into a predetermined background at a desired depth, match, produce a pleasing appearance, easy to implement and cost effective to use at **(Col 3 Lines 23 and 41-48)**. Blank, Enomoto and 5577179 are from the same field of endeavor and are analogous art, therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the teachings of 5577179 in the image editing system of Blank and Enomoto for the above reasons.

29. Regarding Claim 12, Blank and Enomoto discloses the portrait image processing method according to claim 1. Enomoto discloses the degree of certainty using the weight score (positional relationship) between the facial parts and the background. 5577179 also further disclose wherein said step of detecting a boundary uses an average positional relationship between a position of a facial part and a boundary of a person and a background, to detect the boundary at **(Figs 4e, 4f, 4g and Col 14 Lines 38-57 and Col 15 Lines 5-23)**. 5577179 use the positional relation between the **(facial parts eyes, neck)**, the edge of the person **(object)** and the background person **(background in the present context)** to detect the boundary as shown in the figures.

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Claims 13 , 15 , 20, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blank in view of Enomoto and in further view of Lee (US 20030058939) hereafter Lee.

30. Regarding Claim 13, Blank and Enomoto discloses the portrait image processing method according to claim 1. Blank discloses extraction of a person from the background as seen in **(Figs 7A-7D)**. Enomoto discloses the degree of certainty based on the weight score between the face area and the background **(area ratio)** at **(Col 12 Lines 55 through Col 13 lines 1-26)**. Blank and Enomoto however are silent and does not disclose wherein said extracting step extracts a skin color in the original image, sequentially applies area extension to connected areas, from a point of a skin color area, extracts a face area based on a shape of a face, and extracts a hair area above the face area, and/or a neck and chest area below the face area, to extract the portrait image.

Lee discloses wherein said extracting step extracts a skin color in the original image, sequentially applies area extension to connected areas, from a point of a skin color area, extracts a face area based on a shape of a face, and extracts a hair area above the face area, and/or a neck and chest area below the face area, to extract the portrait image. Lee in **(Fig 7 and 8)** discloses the face extraction and gridding of skin color for the extraction. Lee at **(Page 1 Para 15-17)** discloses a precise technique of facial extraction. Lee further discloses the extraction of facial parts and a general region of the human being which would

include the portions such as hair chest etc at **(Page 4 Para 0061)**. Blank, Enomoto and Lee are from analogous art and are from the same field of endeavor, therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the teachings of Enomoto and Lee in the system and process of Blank for the above reasons.

31. Regarding claim 15, Blank and Enomoto disclose the portrait image processing method according to claim 14. Enomoto further discloses wherein a boundary part with low certainty is one of a boundary part where a length between coordinate points on the boundary is partially larger than a decided value, due to unevenness of the boundary at **(Col 12 Lines 55 through Col 13 lines 1-26 where the weight score is decided based on the threshold value to decide the boundary part of the contours of a person)**. Enomoto is silent and however discloses only for a person however Lee discloses the database of range of several person facial skin colors **(Page 1 Para 0015)** which would be obvious to use for more persons as claimed in claim 15.

32. Regarding Claim 20, Blank and Enomoto disclose the portrait image processing apparatus according to claim 19. Enomoto further discloses wherein a boundary part with low certainty is one of a boundary part where a length between coordinate points on the boundary is partially larger than a decided

value, due to unevenness of the boundary at **(Col 12 Lines 55 through Col 13 lines 1-26 where the weight score is decided based on the threshold value to decide the boundary part of the contours of a person)**. Enomoto is silent and however discloses only for a person however Lee discloses the database of range of several person facial skin colors **(Page 1 Para 0015)** which would be obvious to use for more persons as claimed in claim 20.

33. Regarding Claim 22 see the explanation of Claims 1 and 15.

34. Claim 24 is a corresponding apparatus claim of claim 22. See the explanation of Claim 22.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jayesh A. Patel whose telephone number is 571-270-1227. The examiner can normally be reached on M-F 7.00am to 4.30 pm (5-4-9). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public

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PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jayesh Patel
02/21/08

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